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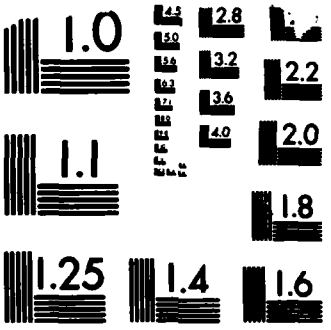


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# APPLICATION OF A COMPUTERIZED GENERAL PURPOSE INFORMATION MANAGEMENT SYSTEM (SELGEM) TO MEDICALLY IMPORTANT ARTHROPODS (DIPTERA: CULICIDAE)

Annual Report

Terry L. Erwin

August 1981

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U. S. ARMY MEDICAL RESEARCH AND DEVELOPMENT COMMAND

Fort Detrick, Frederick, MD 21701

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The Mosquito Information Management Project (MIMP), a collaborative venture between the U. S. Army Biosystematic Unit, WRAIR, and the Department of Entomology, Smithsonian Institution, was initiated in 1979 for the purpose of developing a computer-based systematic and ecological master file (data bank) of the National Museum Mosquito Collection. The approximately one million specimens with associated data, in the Smithsonian Institution, constitute the best mosquito collection in the world. The data management system (SELGEM) (SELf-GEnerating Master) was-

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20. adapted to meet the needs of MIMP. Submission of the data recorded on the collection forms to the Honeywell Series 60 Level 66/20 computer system is via the Nixdorf® 600/55 minicomputer data entry system.

Input of the 1,939 collection records pertaining to the Albimanus Section of the subgenus Nyssorhynchus of Anopheles and all associated species has been completed. Also, about 1,100 and 540 collection forms, of the project Mosquitoes of Middle America (MOMA), for Panama and Colombia respectively have been submitted to the computer. Six separate files have been established based on geographic groupings for the countries of Middle and South America for ease and economy in querying these files.

Narratives concerning the medical importance, bionomics and distribution, with important references, cross-referenced by a "species code" number on the collection form, have been entered onto floppy disks in a word processing system for the 25 species in Anopheles (Nyssorhynchus). MIMP has acquired, through the transfer of the MOMA collection from UCLA to the Smithsonian, about 5,000 topographic maps and 11,400 collection forms.

A manuscript is being submitted for publication to the Journal of Medical Entomology that describes MIMP, its objectives, capabilities and limitations. A poster paper on MIMP was presented at the annual meeting of the American Society of Tropical Medicine and Hygiene, and the abstract of this paper was published in the Arthropod-Borne Virus Information Exchange, March 1981. A user request form was designed and circulated at this meeting, which has resulted in several requests for data.



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# ANNUAL REPORT

# MOSQUITO INFORMATION MANAGEMENT PROJECT

## SUMMARY

The Mosquito Information Management Project (MIMP), a collaborative venture between the U. S. Army Biosystematic Unit, WRAIR, and the Department of Entomology, Smithsonian Institution, was initiated in September, 1979, for the purpose of developing a computer-based systematic and ecological master file (data bank) of the National Museum Mosquito Collection. The approximately one million specimens with associated data, in the Smithsonian Institution, constitute the best mosquito collection in the world. The data management system SELGEM (SELf-GEnerating Master) was adapted to meet the needs of MIMP. Submission of the data recorded on the collection forms to the Honeywell® Series 60 Level 66/20 computer system is via the Nixdorf® 600/55 minicomputer data entry system.

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## FOREWORD

Citation of trade names in this report does not constitute an official endorsement or approval of the use of such commercial items.

REVIEW OF PROGRESS FOR THE PERIOD

1 JUNE 1980 TO 30 JUNE 1981

I. Development of SELGEM MASTER FILE

Input of all the collection records pertaining to the Albimanus Section of the subgenus *Nyssorhynchus* of *Anopheles*, and all species collected in association with these species, has been completed. These 1,939 collection forms contain data on roughly 70,000 specimens. In addition about 1,100 and 540 collection forms, of the Mosquitoes of Middle America (MOMA), for Panama and Colombia respectively have been submitted to the computer.

II. Six separate files based on geographic groupings of countries and islands have been established:

A. Mexico and Central America-includes Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Panama.

B. Western South America-includes Chile, Colombia, Ecuador, Peru, and Venezuela.

C. Northeastern South America-includes Brazil, French Guiana, Guyana, and Suriname.

D. Southeastern South America-includes Argentina, Bolivia, Paraguay, and Uruguay.

E. Greater Antilles-includes Bahama Islands, Cayman Islands, Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico, and Virgin Islands.

F. Lesser Antilles-includes Anguilla, Antigua, Barbados, Barbuda, Dominica, Grenada, Guadeloupe, Martinique, Montserrat, Nevis, St. Kitts, St. Lucia, St. Martin, St. Vincent, and Trinidad and Tobago.

Every currently recognized country in the world has been assigned a 2 or 3 letter country code according to the National Bureau of Standards.

The rationale behind establishment of separate files for particular geographic regions is for ease and efficiency in querying these files. If there is a request for the distribution of a species, for example in Colombia, it is not necessary to search through every record for every collection (which in the future could be very expensive), but only search through the Western South America file. This will greatly reduce computer charges as the data base expands.

III. Created new index entitled "Species Code"

MIMP is currently in the process of assigning a species code number to mosquito species of known or suspected medical importance, which is recorded on the back of the collection form adjacent to the space for medical importance. This species code will serve as a cross reference for a particular species to a 99 line or less narrative on the bionomics (immature habitats, adult behavior, etc.), medical importance and distribution, including important references. This narrative is being placed on floppy disks in a word processing system, which will later be submitted to the computer. To date the 25 species in the subgenus *Nyssorhynchus* of *Anopheles* have been assigned species codes and narratives created.

IV. Mosquito collection, collection records, reprint files, map collection and library of the Mosquitoes of Middle America (MOMA).

In January 1981, the Smithsonian Institution transferred the MOMA collection and above materials from UCLA to the Medical Entomology Project (MEP) and MIMP. MIMP has incorporated the map collection and 11,388 collection records into its files. The map collection consists of about 5,000 topographical maps for Middle and South America. MIMP now has about 10,000 maps (some are duplicates).

V. Presentation at Annual Meeting of American Society of Tropical Medicine and Hygiene

A poster session was presented at this meeting outlining the objectives, methods and materials, and capabilities of MIMP. A "user request form" and abstract were prepared and distributed to interested people. The abstract was published in the Arthropod-Borne Virus Information Exchange, March 1981. We received requests from the following persons:

A. MAJ Charles L. Bailey, Chief, Department of Entomology
USAMRID, Ft. Detrick
Frederick, MD

Requested maps of Egypt; collection forms.

B. Nora J. Besansky, Oberlin College
Oberlin, Ohio

Requested printout of species in Costa Rica; maps; collection

forms; and other pertinent material.

C. Dr. Leonard E. Munstermann, Department of Biology
University of Notre Dame
Notre Dame, Indiana

Requested collection forms.

Requested printout of collections and computerized map from Colombia--is in the process of being filled.

D. Dr. Dorothy P. Pashley, Department of Biology
University of Notre Dame
Notre Dame, Indiana

Requested collections including *Aedes (Stegomyia) scutellaris* subgroup from Solomon Is., New Hebrides, Santa Cruz Is. and New Guinea; Southeast Asia and South Pacific.--Request fullfilled from MOMA notebooks.

E. LTC John F. Reinhert

Requested copy of printout of his previous collection records from Brazil.

VI. Paper "Computerized Information and Collection Management System for Systematic Research and Medical Entomology (Diptera: Culicidae)"

The paper describing MIMP is being submitted to the Journal of Medical Entomology for publication. It is anticipated that this paper will bring the

project to the attention of medical researchers who would benefit from the information stored in this data base.

VII. Presentation of Annual Meeting of Entomological Society (ESA)

An abstract has been submitted to the ESA for a paper on MIMP to be presented at the 1981 annual meeting scheduled 29 November-2 December.

VIII. Visitors to this project include

A. MAJ Jay Abercrombie (USAMRDC, Ft. Detrick, MD)

B. MAJ Charles L. Bailey (USAMRIID, Ft. Detrick, MD)

C. MAJ Anthony B. Bosworth (USAMRU-Brasilia, APO Miami, FL)

D. LTC Ralph R. Carestia (Defense Pest Management Information Analysis Center, WRAMC, Washington, DC)

E. Dr. Hector Dorado (Institute of Tropical Medicine, Manaus, Brazil)

F. CPT Jayson Glick (USAMRIID, Ft. Detrick, MD)

G. Drs. James E. Keirnans and Carleton M. Clifford (Rocky Mountain Laboratory, Hamilton, Montana)

H. CPT Terry Klein (AFRIMS, APO San Francisco, LA)

I. Dr. Kenneth Knight (North Carolina State University, Raleigh, NC)

J. Mr. Sidney E. Kunz (USDA-SEA-AR, Livestock Insects Laboratory, Kerrville, TX)

K. Dr. Simon J. Miles (London School of Hygiene and Tropical Medicine, London, England)

L. Dr. Jack Peterson (Gorgas Memorial Laboratory, Panama)

M. LTC Donald R. Roberts (WRAIR, Washington, DC)

N. Dr. Ronald Rosenberg (NIH, Washington, DC)

O. COL Phillip K. Russell and COL Franklin Topp (WRAIR, Washington, DC)

P. Dr. Imogene Schneider (WRAIR, Washington, DC)

Q. Dr. Wallace A. Steffan (Bernice P. Bishop Museum, Honolulu, HA)

R. Ms. Carolyn Stettner (WRAIR, Washington, DC)

## REFERENCES

Faran, Michael E., C. Burnett and C. Bailey. 1981. Application of a computerized information management system (SELGEM) to medically important arthropods (National Museum Mosquito Collection). Arthropod-Borne Virus Information Exchange 40:76.

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